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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,504	09/03/2004	Sanghee Kim	038665.55367US	2728
23911	7590	05/15/2006	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			LE, MICHAEL	
			ART UNIT	PAPER NUMBER
			2163	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/506,504	KIM ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael Le	2163	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/22/05</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Summary and Status of Claims***

1. This Office Action is in response to Application No. 10/506,504 filed September 3, 2004.
2. The Specification is objected to.
3. The Information Disclosure Statement is objected to.
4. Claims 1-9 are pending.
5. Claim 4 is rejected under 35 U.S.C. 112, second paragraph.
6. Claim 7 is rejected under 35 U.S.C. 101.
7. Claims 1 and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yimam, Dawit ("Expert Finding Systems for Organizations: Domain Analysis and the DEMOIR Approach", 2000) provided by Applicant, in view of Liddy et al. (US Patent 5,963,940) provided by Applicant.
8. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yimam, Dawit ("Expert Finding Systems for Organizations: Domain Analysis and the DEMOIR Approach", 2000) provided by Applicant, in view of Liddy et al. (US Patent 5,963,940) provided by Applicant, further in view of Paik et al. ("Applying Natural Language Processing (NLP) Based Metadata Extraction to Automatically Acquire User Preferences", October 2001) provided by Applicant.

### ***Priority***

9. The present Application is the U.S. National Stage of PCT/GB03/00870 filed February 128, 2003. Applicant also claims foreign priority under 35 U.S.C. 119 to United Kingdom

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Patent Application No. 0205097.9 filed March 5, 2002 and United Kingdom Patent Application No. 0218589.0 filed August 12, 2002. Receipt of the foreign priority documents is acknowledged. Consequently, claims 1-9 have been examined with a priority date of March 5, 2002.

### ***Information Disclosure Statement***

10. The information disclosure statement (IDS) submitted on February 22, 2005 has "sheet 1 of 2", however only one page was submitted. Documents listed on the second page, were not considered. If this is a typographical error, correction is requested. If the second page was not submitted and Applicant wishes for the references to be considered, resubmission of the IDS is required. Additionally, references AD and AE were not submitted. The Examiner located the references and they have been considered as denoted on the IDS.

### ***Specification***

11. The abstract of the disclosure is objected to because "Fig1." seems to be inadvertently included on the abstract sheet. Correction is required. See MPEP § 608.01(b).

12. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method of Ranking Experts Based on Document Linguistic Analysis.

13. The disclosure is objected to because of the following informalities:

14. Page 1, line 1, "modelling" has to be changed to --modeling--.

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15. Page 2, line 1 "it" has to be changed to --it's--.
16. Page 2, line 17 --the-- has to be inserted before "working".
17. Page 4, line 17 "modelling" has to be changed to --modeling--.
18. Page 6, line 27, --of-- has to be inserted after "results".
19. Page 8, line 18 "modelling" has to be changed to --modeling--.
20. The use of the trademark "WordNet" has been noted in this application on page 8, line 29 and page 11, line 7. It should be capitalized wherever it appears and be accompanied by the generic terminology.
21. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.  
Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

22. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
23. **Claim 4 is rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
24. Regarding **claim 4**, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

25. The prior art rejection below for claim 4 is made as best understood in light of the 35 U.S.C. 112, second paragraph rejection addressed above.

***Claim Rejections - 35 USC § 101***

26. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

27. **Claim 7 is rejected under 35 U.S.C. 101** because the claimed invention is directed to non-statutory subject matter.

28. The basis of this rejection is set forth in a test of whether the invention is categorized as a process, machine, manufacture or composition of matter and if the invention produces a useful, concrete and tangible result. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) are found to be non-statutory subject matter. For a method claim to pass muster, the recited process must produce a useful, concrete and tangible result.

29. In the present case, **claim 7** recites a computer program for executing the method of claim 1. A computer program must be tangibly embodied on a computer storage medium in order to allow the functionality of the computer program to be realized on a computer. Applicant is reminded that no new matter may be added.

30. To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention

***Claim Rejections - 35 USC § 103***

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. **Claims 1 and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yimam, Dawit (“Expert Finding Systems for Organizations: Domain Analysis and the DEMOIR Approach”, 2000) provided by Applicant, hereinafter “Yimam”, in view of Liddy et al. (US Patent 5,963,940) provided by Applicant, hereinafter “Liddy”.**

33. In regards to **claim 1**, Yimam discloses a method for ranking creators of a set of documents in order to their expertise in a subject (Yimam: Table 1; Pg. 10, para. 7, lines 2-4) including the steps of:

- a. selecting documents from the set of documents that refer to the subject to create a subject related subset of documents (Yimam: Table 1; pg. 10, para. 2);
- b. selecting extracts from the subset of documents that refer to the subject (Yimam: pg. 10, para. 3; ); and
- c. using the analysis to rank the creators (Yimam: page 10, para. 7, lines 2-4).

34. Yimam does not expressly disclose analyzing the linguistic structure of the extracts by isolating verbs in the extracts to create a set of verbs for classification and classifying each isolated verb in the set of verbs according to a predetermined hierarchy.

35. Liddy discloses a natural language processing (NLP) technique that processes a subset of documents (Liddy: col. 4, lines 43-48, 59-67; col. 5, lines 1-3) and analyzes the linguistic

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structure of the documents (Liddy: col. 9, lines 32-35, 44-50; col. 13, lines 4-9) isolating words (verbs) (Liddy: col. 12, lines 30-35) and classifying them into a predetermined conceptual hierarchy (Liddy: col. 12, lines 47-49, 64-67; col. 13, lines 1-4).

36. Yimam and Liddy are analogous art because they are from the same field of endeavor of processing documents and extracting terms.

37. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the method of Yimam by adding the steps of analyzing the linguistic structure of the extracts by isolating verbs in the extracts to create a set of verbs for classification and classifying each isolated verb in the set of verbs according to a predetermined hierarchy, taught by Liddy.

38. The motivation for doing so would have been because Yimam describes expert finding to include the ability to interpret concept to document relations, which suggests the need for techniques to extract and analyze documents (Yimam: pg. 13, section (3), lines 2-4). It is well known in the art to use natural language processing to process documents and analyze the linguistic structure of the documents and interpreting them.

39. In regards to **claim 4**, the limitation was addressed above in the rejection to claim 1 as disclosed by Liddy. Liddy discloses decomposing documents into terms that are extracted, wherein a terms can be verbs (Liddy: col. 5, lines 8-15; col. 12, lines 32-43).

40. In regards to **claim 5**, one of ordinary skill in the art of Natural Language Processing (NLP) would be aware of the Speech Act Theory (SAT). The Speech Act Theory is well known in the art of NLP. As Applicant states in paragraph 0036 of the Specification, "SAT says that the



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fact that working practices are reflected through task achievement”, one of ordinary skill in the art would opt to favor first person actions over third person actions. The Speech Act Theory focuses on what people “do” and not only statements that are made, but actions also performed by those statements. Thus, referencing the SAT, at the time of the invention, it would have been obvious for one of ordinary skill in the art to modify the method of Yimam by adding the step of weighting extracts to favor those written in the first person over those written in the third person.

41. In regards to **claim 6**, Yimam discloses a method for ranking creators according to claim 1, wherein the set of documents is e-mail communications (Yimam: pg. 8, lines 5-6; Table 1).

42. **Claims 7-9** are substantially similar to claim 1 in the form of a computer program and a computer and are rejected for the same reasons. Liddy discloses a computer programmable to perform the method of claim 1 (Liddy: col. 5, lines 20-47).

43. **Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yimam, Dawit (“Expert Finding Systems for Organizations: Domain Analysis and the DEMOIR Approach”, 2000) provided by Applicant, hereinafter “Yimam”, in view of Liddy et al. (US Patent 5,963,940) provided by Applicant, hereinafter “Liddy”, further in view of Paik et al. (“Applying Natural Language Processing (NLP) Based Metadata Extraction to Automatically Acquire User Preferences”, October 2001) provided by Applicant, hereinafter “Paik”.**

44. In regards to **claim 2**, Yimam and Liddy do not expressly disclose discloses a method for ranking creators of a set of documents according to claim 1 including the further step of:

- a. creating the predetermined hierarchy by mapping isolated verbs to an illocutionary verb in a predefined set of illocutionary verbs and;
- b. classifying the mapped isolated verbs according to the Speech Act Theory category of the corresponding illocutionary verb.

45. Paik discloses using the Speech Act Theory to classify various speech acts from analyzing email messages to different categories (Paik: pg. 118, lines col. 1, lines 42-48).

46. Yimam, Liddy and Paik are analogous art because they are directed to the same field of endeavor of processing documents and language.

47. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined method of Yimam and Liddy by adding the steps of creating the predetermined hierarchy by mapping isolated verbs to an illocutionary verb in a predefined set of illocutionary verbs and classifying the mapped isolated verbs according to the Speech Act Theory category of the corresponding illocutionary verb, as taught by Paik.

48. The motivation for doing so would have been because using the Speech Act Theory for classifying verbs is known in the art of Natural Language Processing.

49. In regards to **claim 3**, Yimam and Paik do not expressly disclose a method for ranking creators of a set of documents according to claim 2 including the further step of:

- a. filtering isolated verbs not having a predefined illocutionary verb and thus not successfully mapped to the set of illocutionary verbs;
- b. checking for synonyms of the unmapped isolated verbs, that have a predefined illocutionary verb; and

- c. classifying the unmapped isolated verbs according to the Speech Act Theory of the corresponding illocutionary verb of it synonym.

50. Liddy discloses looking up words in a lexical resource in order to assign the word a subject code, giving the word a meaning as determined from the context and other criteria (Liddy: col. 9, lines 51-61). Liddy also discloses using the subject codes to determine other words with the same meaning (synonyms) to disambiguate the word (Col. 9, lines 62-67; col. 10, lines 1-7, 15-18).

51. Yimam, Liddy and Paik are analogous art because they are directed to the same field of endeavor of document and language processing.

52. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the combined method of Yimam, Liddy and Paik by adding the steps of filtering isolated verbs not having a predefined illocutionary verb and thus not successfully mapped to the set of illocutionary verbs, checking for synonyms of the unmapped isolated verbs, that have a predefined illocutionary verb, as taught by Liddy, and classifying the unmapped isolated verbs according to the Speech Act Theory of the corresponding illocutionary verb of it synonym.

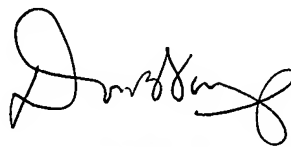
53. The motivation for doing so would have been because in many languages, polysemy exists and such steps are needed to properly determine the meaning of the word (Liddy: col. 9, lines 62-67; col. 10, lines 1-7). Additionally, use of the Speech Act Theory for classifying verbs is known in the art of natural language processing (Paik: pg. 116, col. 1, lines 18-20).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Le whose telephone number is 571-272-7970. The examiner can normally be reached on Mon-Thurs : 9:30am-6pm, Fri: 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**DONWONG**  
**SUPERVISORY PATENT EXAMINER**

Michael Le  
Art Unit 2163  
April 26, 2006